REMARKS

This preliminary amendment accompanies a request for continued examination.

As a preliminary matter, Applicants thank the Examiner for his consideration during a telephone interview on April 12, 2006, during which the Examiner clarified his earlier rejection of claim 16 under 35 U.S.C. §112 and indicated that the rejection could be overcome by adding an indentation to separate claim 16's preamble from the rest of the claim.

Applicants have amended claim 16 according to the Examiner's suggestion and respectfully request withdrawal of the §112 rejections.

Claims 1-22 and 29-31 are pending. Claim 16 has been amended. Claims 29, 30 and 31 are new.

Applicants thank the Examiner for recognizing that claims 7, 8, 14, 15, 20 and 21 contain allowable subject matter.

A final office action was mailed on November 16, 2005 rejecting claims 1-6, 9-13, 16-19 and 22 under 35 U.S.C. §103(a) as being unpatentable over Kobayashi et al. (U.S. Patent No. 6,029,264) in view of Steele et al. (U.S. Patent No. 4,393,276). Applicants responded by traversing those rejections. An advisory action was mailed on March 22, 2006 maintaining the §103 rejections and providing comments that shed new light on those rejections.

Applicants disagree with the §103 rejections articulated in the advisory action and in the final office action and respectfully request reconsideration of those rejections for at least the following reasons.

The Kobayashi et al. patent appears to have been interpreted in a number of different ways to reject, for example, claim 1 but ultimately, the Examiner concluded that "no matter how one looks at it, [Kobayashi's] AZD unit approximate[s] the reversed effect of some encoder." However, regardless of how the Kobayashi et al. patent is interpreted, that patent simply does not

disclose decoding an encoded packet using a look-up table that stores information approximating output of an algorithmic decoding process, as is recited in claim 1.

First, the advisory action states that: 1) the output of the MUX in FIG. 14A of the Kobayashi et al. patent is input into a channel modulator to produce a signal that is modulation encoded; and 2) the AZD in FIG. 14B of the Kobayashi et al. patent approximately reverses the effect of the modulation encoding. That interpretation of the disclosure in the Kobayashi et al. patent is incorrect. Moreover, even if the asserted interpretation were correct, that interpretation does not amount to decoding an encoded packet using a look-up table that stores information approximating output of an algorithmic decoding process, as is recited in claim 1.

That interpretation of the Kobayashi et al. patent is incorrect because the data provided by the multiplexer in FIG. 14A of the Kobayashi patent is neither input into a "channel modulator" nor is it "modulation encoded" by the channel. The Kobayashi patent clearly discloses the data is transmitted over a *communication* channel (col. 1, lines 39-48). The communication channel *does not* modulate or encode the transmitted data. Rather, channel distortion and interference induce *random* errors in the transmitted signal (col. 1, lines 14-16, 27-30; col. 2, lines 18-20; col. 8, lines 33-35). It is well known to those of ordinary skill in the art that the *random* generation of errors on data transmitted over a communication medium does not correspond to encoding or modulating the data.

The applicant notes that the claim language should be interpreted in view of the specification. For example, the present application discloses that the process of encoding data is accomplished with a channel encoder 120 *prior to* transmission through a communication channel (page 1, lines 7-11; page 4, lines 1-5). As is well known in the art, a communication channel is used for transmission of data, not encoding or modulating data.

The advisory action's interpretation of the Kobayashi et al. patent also is incorrect because the AZD in FIG. 14B of the Kobayashi et al. patent does not approximately reverse the effect of the random errors that are induced in the signal that is transmitted over the channel of FIG. 14A. Instead, the AZD merely assigns "erasure symbols" to the ambiguous data. The "erasure symbols" are not an approximation of data that has been encoded. That is clear from

FIGs. 9A and 9B of the Kobayashi et al. patent, which show erasure symbols "e" and "f." The output of unambiguous data from the AZD is a numerical value (*i.e.*, either "0", "1" or "2"). It is hard to imagine how the letters "e" and "f" could be considered an approximation of a numerical value.

The Examiner further asserts that, in the particular instance where no noise is induced by the channel shown in FIG. 14A of Kobayashi, the output of the AZD will be identical to the output of an algorithmic decoding process. In such an instance, no "erasure symbols" would be outputted and the output of the AZD would presumably be equivalent to the data that was transmitted across the channel of FIG. 14A. As applicants best understand the Examiner's position: 1) the noiseless transmission of data across the channel of FIG. 14A somehow is considered encoding the data, and 2) the AZD's processing of the noise-free data it receives somehow is considered decoding the data. That is incorrect. Even if the noise induced by the communication channel did correspond to encoding data (which the applicant disputes), the absence of noise indicates, in effect, that the data is *not encoded*. Since the data is *not encoded*, the concept of decoding that data makes no sense.

Moreover, even if 1) the output of the MUX in FIG. 14A of the Kobayashi et al. patent were input into a channel modulator to produce a signal that is modulation encoded; and 2) the AZD in FIG. 14B of the Kobayashi et al. patent did approximately reverse the effects of that modulation encoding, that interpretation does not amount to decoding an encoded packet using a look-up table that stores information approximating output of an algorithmic decoding process, as is recited in claim 1. In particular, the input/output characteristics of the AZD (*see* FIG. 9B) does not approximate an algorithmic decoding process. Instead, the input/output characteristics merely assign a non-numeric value (*i.e.*, "e" or "f") to certain ambiguous data. That is not an algorithm. An "algorithm" is, for example, "a procedure for solving a mathematical problem . . . in a finite number of steps that frequently involves repetition of an operation." (Merriam-Webster's Online Dictionary) The AZD does not approximate a procedure for solving a mathematical problem in a finite number of steps that frequently involves repetition of an operation.

The Examiner also asserts that AZD2 in FIG. 12 of the Kobayashi patent corresponds to a look-up table that approximates an algorithmic decoding process of the encoder E3 in FIG. 11A. That also is incorrect. AZD2 does not store information that approximates an algorithmic decoding process of the encoder E3.

AZD2 merely quantizes received data and assigns erasure symbols (*e.g.*, symbols "e" and "f" in FIG. 9B) to digits of the data that fall into ambiguous zones. AZD2 does not store an approximation of an algorithmic decoding process (col. 12, lines 26-28). Quantizing data does not amount to decoding encoded data. Nor does assigning erasure symbols amount to decoding encoded data.

In addition, AZD2 is only one part of a decoder (*i.e.*, all the elements illustrated in FIG. 12C comprise a decoder). The decoder of FIG. 12C decodes using a simple iterative process (not an approximation of an iterative process), wherein each iteration resolves certain errors in the data being decoded. Although AZD2 (which is part of the decoder) may, in certain implementations, utilize a logic table, that logic table is not used to decode the encoded data that is received (*See* column 6, lines 41-45). Instead, as discussed above, that table is merely used to assign "erasure symbols" to ambiguous data.

For at least the foregoing reasons, the Kobayashi et al. patent neither discloses nor suggests decoding an encoded packet using a look-up table that stores information approximating output of an algorithmic decoding process, as is recited in claim 1. Nor does the Steele patent disclose or suggest that feature.

Claim 1 should be allowed for at least the foregoing reasons.

Claims 2-5 depend from claim 1 and, therefore, should be allowable for at least the same reasons as claim 1.

Independent claims 6, 9, 13, 16 and 19 recite features that are similar to those discussed above with reference to claim 1. Accordingly, those claims should be allowable for at least the same reasons as claim 1.

Claims 10-12 and 17-18 depend from allowable claims and, therefore, should be allowable for at least the same reasons as the claims from which they respectively depend.

Support for new claims 29-31 can be found, for example, in the claims and on page 11, line 8-20. No new matter has been added. New claims 29-31 recite features that are similar to those discussed above with reference to claim 1. Accordingly, claims 29-31 should be allowable for at least the same reasons as claim 1.

Additionally, certain of the rejected dependent claims recite other features that provide a basis for patentability.

For example, claim 5 recites that the look-up table stores information that approximates a soft-input soft-output, soft-input hard-output, hard-input soft-input or hard-input hard-output algorithmic decoding process. The Examiner alleges that FIG. 14B of the Kobayashi et al. patent discloses a look-up table that stores the foregoing information. That is incorrect. The decoder shown in FIG. 14B is a parallel decoder which includes upper and lower decoders D1, D2 that iteratively decode an information stream I (col. 12, lines 62-67 – col. 13, lines 1-8). There is no disclosure or suggestion in the Kobayashi patent of a look-up table that stores an approximation of a soft-input soft-output, soft-input hard-output, hard-input soft-input or hard-input hard-output algorithmic decoding process.

For the foregoing additional reasons, claim 5 should be allowed.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this

paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Conclusion

In view of the above remarks, all remaining claims are allowable and a notice of allowance should be issued.

Enclosed is a check for $790 for the Request for Continued Examination. Also enclosed is a $330 for the Petition for Two-Month Extension of Time. Applicants previously paid for a one-month extension of time with a petition that was filed on March 3, 2006. The enclosed $330 check represents the difference between the cost of a two month extension of time ($450) and the cost of a one-month extension of time ($120).

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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